## WHAT IS CLAIMED IS:

1	1.	An apparatus for thermally treating at least one intervertebral disc,
2	comprising:	
3	(a)	an energy application head having an energy application region
4		and a tissue protecting region;
5	(b)	a circumferencial intersection between said energy application
6		region and said tissue protecting region;
7	(c)	at least part of said circumferencial intersection being a thin
8		insertion edge;
9	(d)	said tissue protecting region being sloped from said thin insertion
10		edge to a thick region for lifting vulnerable tissues away from a site
11		of energy application to said at least one intervertebral disc; and
12	(e)	a control member operationally connected to said energy
13		application head, said control member suitable for controlling said
14		energy application head during treatment of said at least one
15		intervertebral disc.
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1	2.	The apparatus of claim 1, wherein said energy application head is
2	wedge-shaped.	
3		
1	3.	The apparatus of claim 1, wherein said tissue protecting region has
2	a domed center.	
3		
1	<b>4</b> .	The apparatus of claim 1, wherein said energy application region
2	has a smooth surfa	ace suitable for gliding over surfaces of an annulus fibrosis without
3	snagging other tiss	
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1	5.	The apparatus of claim 1, said energy application head further
2	comprising at leas	t one instrument selected from the group consisting of:
3	(a)	a temperature measuring instrument;
4	(b)	a tissue visualizing instrument
5	(c)	an energy measuring instrument;
6	(d)	a distance measuring instrument;
7	(e)	an area measuring instrument;
8	(f)	a pressure measuring instrument; and
9	(g)	a volume measuring instrument.
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1	6.	The apparatus of claim 1, said energy application head further
2		t one energy applicator selected from the group consisting of:
3	(a)	a laser;
4	(b)	a fiber-optic strand;
5	(c)	a lens;
6	(d)	an electrode;
7	(e)	a wire;
8	(f)	a light bulb;
9	(g)	a heating element; and
0	(h)	an ultrasound transducer.
1	( )	
1 1		
1	7.	The apparatus of claim 1, wherein said energy application head
2	applies energy sel	ected from the group consisting of:
3	(a)	electric current;
4	(b)	radio frequency waves;
5	(c)	microwaves;
6	(d)	infrared waves;
7	(e)	visible light waves;
8	(f)	ultraviolet waves:

9	(g)	ultrasonic sound waves; and	
10	(h)	conductive thermal energy.	
11			
1	8.	The apparatus of claim 7, said energy further comprising energy in	
2	a form selected fro	om the group consisting of:	
3	(a)	incoherent electromagnetic radiation;	
4	(b)	defocused laser energy; and	
5	(c)	collimated laser energy.	
6			
1	9.	The apparatus of claim 1, said tissue protecting region further	
2	comprising at least one thermal protector for protecting vulnerable tissues from energy		
3	applied by said energy application head.		
4			
1	10.	The apparatus of claim 9, wherein said at least one thermal	
2	protector is selecte	ed from the group consisting of:	
3	(a)	at least one layer of insulation;	
4	(b)	airflow coolant;	
5	(c)	liquid coolant;	
6	(d)	coolant from a refrigeration system;	
7	(e)	a thermocouple; and	
8	<b>(f)</b>	a heat-pipe.	
9			
1	11.	The apparatus of claim 1, said control member further comprising	
2	at least one memb	per selected from the group consisting of:	
3	(a)	a wire;	
4	(b)	a fiber-optic strand;	
5	(c)	one or more hollow tubes;	
6	(d)	a radio control mechanism;	

7		(e)	a moving mechanical link; and
8		` ,	a beam of light;
		(f)	-
9		(g)	a lumen for adding and removing instruments;
10		(h)	a lumen for adding and removing tissue; and
11		(i)	a lumen for irrigating.
12			
1		12.	An apparatus for thermally treating at least one intervertebral disc,
2	comprising:		
3		(a)	an energy application head having an energy application region
4			and a tissue protecting region;
5		(b)	a thin insertion edge formed at the anterior portion of a
6			circumferencial intersection between said energy application region
7			and said tissue protecting region;
8		(c)	said tissue protecting region being sloped from said thin insertion
9			edge to a thick region for lifting vulnerable tissues away from a site
10			of energy application to said at least one intervertebral disc; and
11		(d)	a control member operationally connected to said energy
12			application head, said control member suitable for controlling said
13			energy application head during treatment of said at least one
14			intervertebral disc.
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1		13.	The apparatus of claim 12, wherein said energy application head is
2	wedge-shape		The apparatus of statin 12, who our said shorty application had to
3			
1		14.	The apparatus of claim 12, wherein said tissue protecting region
2	has a domeo	d cente	r.

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1		15.	The apparatus of claim 12, wherein said energy application region
2	has a smooth surface suitable for gliding over surfaces of an annulus fibrosis without		
3	snagging oth	er tiss	ues.
4			
1		16.	An apparatus for thermally treating at least one intervertebral disc,
2	comprising:		
3		(a)	an energy application head having an energy application region
4			and a tissue protecting region;
5		(b)	a thin insertion edge formed at the anterior portion of a
6 7			circumferencial intersection between said energy application region and said tissue protecting region;
8		(c)	said tissue protecting region being sloped from said thin insertion
9		(0)	
			edge to a thick region for lifting vulnerable tissues away from a site
10			of energy application to said at least one intervertebral disc.
11			
1		17.	The apparatus of claim 16, wherein said energy application head is
2	wedge-shap	ed.	
3			
1		18.	The apparatus of claim 16, wherein said tissue protecting region
2	has a domed	d cente	er.
3			
1		19.	The apparatus of claim 16, wherein said energy application region
2	has a smoot	h surfa	ce suitable for gliding over surfaces of an annulus fibrosis without
3	snagging oth	ner tiss	ues.
4			
1		20.	An apparatus for thermally treating at least one intervertebral disc,
2	comprising:		The second of th
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3	(a)	an energy application head having an energy application region
4		and a tissue protecting region;
5	(b)	a control member operationally connected to said energy
6		application head, said control member suitable for controlling said
7		energy application head during treatment of said at least one
8		intervertebral disc;
9	(c)	said energy application head further comprising a thin insertion
10		edge at the anterior intersection of said energy application region
11		and said tissue protecting region; and
12	(d)	said tissue protecting region sloped to a thick region for lifting
13		vulnerable tissues away from a site of energy application to said at
14		least one intervertebral disc.
15		
1	21.	The apparatus of claim 20, wherein said energy application head is
2	wedge-shaped.	
3		
1	<b>22</b> .	The apparatus of claim 20, wherein solid tiesus protection region
2	has a domed cente	The apparatus of claim 20, wherein said tissue protecting region
	nas a domed cente	zi.
3		
1	23.	The apparatus of claim 20, wherein said energy application region
2	has a smooth surfa	ce suitable for gliding over surfaces of an annulus fibrosis without
3	snagging other tiss	ues.
4		
4	24	A mothod for anidurally treating at least and interpret level dis-
1	24.	A method for epidurally treating at least one intervertebral disc
2	_	sher, said method comprising the steps of:
3	(a)	gaining access to a vertebral column;
4	(b)	inserting a thin insertion edge formed at the anterior portion of a
5		circumferencial intersection between an energy application region

б		and a	a tissue protecting region of an energy application head of said
7		disc	refurbisher;
8	(c)	epidu	urally approaching the posterior aspect of said at least one
9		inter	vertebral disc;
10	(d)	lifting	vulnerable tissues using said tissue protecting region, said
11		tissu	e protecting region being sloped from said thin insertion edge
12		to a t	hick region; and
13	(e)	apply	ring energy to a posterior aspect of said at least one
14		inter	vertebral disc using said energy application region.
15			
1	25.	A me	ethod for thermally treating an intervertebral disc while
2	thermally protecting	g vulne	erable tissues, said method comprising the steps of:
3	(a)	provi	ding a disc refurbisher, said disc refurbisher comprising:
4		(i)	an energy application head having an energy application
5			region and a tissue protecting region;
6		(ii)	a thin insertion edge formed at the anterior portion of a
7			circumferencial intersection between said energy application
8			region and said tissue protecting region;
9		(iii)	said tissue protecting region being sloped from said thin
10			insertion edge to a thick region for lifting vulnerable tissues
11			away from a site of energy application to said at least one
12			intervertebral disc; and
13		(iv)	a control member operationally connected to said energy
14			application head, said control member suitable for controlling
15			said energy application head during treatment of said
16			intervertebral disc;
17	(b)	gaini	ng access to a vertebral column;
18	(c)	epidı	urally approaching the posterior aspect of said at least one
19		inter	vertebral disc using said control member to position said
20		ener	gy application head;

21	(d)	evaluating an extent of disc injury and calculating an amount of
22		energy needed to thermally refurbish said at least one intervertebral
23		disc;
24	(e)	applying energy using said disc refurbisher to a posterior aspect of
25		said at least one intervertebral disc while maintaining a safe
26		temperature in said vulnerable tissues near said at least one
27		intervertebral disc;
28	(f)	monitoring an amount of energy delivered and a temperature in
29		said vulnerable tissues near said at least one intervertebral disc;
30	(g)	observing and evaluating an amount of shrinkage and
31		strengthening of said at least one intervertebral disc to determine
32		an intensity and duration of further energy delivery; and
33	(h)	verifying that said shrinkage and strengthening of said at least one
34		intervertebral disc is mechanically successful.
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